

Amendments to the Specification:

Please amend the paragraph beginning on page 5, line 24 to read as follows:

The relative cross-sectional areas of the write pole ~~136~~ 134 and return pole ~~134~~ 136 are selected such that the flux density of the field from the write pole ~~136~~ 134 is sufficient to reorient the localized magnetization of the recording layer 140 in a direction normal to the direction of movement of the disc 108 with respect to the head (i.e., up or down with reference to FIG. 3). At the same time, the return field that enters the return pole 136 has a sufficiently lower flux density so as to not disturb the existing magnetization of the recording layer 140.

Please amend the paragraph beginning on page 7, line 3 to read as follows:

The preamp 126 further includes a demagnetization current generator 168 which, as explained below, selectively applies a demagnetizing current sequence to the head 112 at the conclusion of a write event. The demagnetization current generator 168, also referred to as a “decay current” generator, preferably receives inputs from a residual magnetization sense circuit 170 and a clock 172, both preferably contained within the preamp 126. The operation of the demagnetization current generator 168 can be controlled either on-chip or by control inputs from the servo circuit 130, as desired. Thus, in some preferred embodiments, the preamp 126 is configured to carry out the entire demagnetization operation in an adaptive, self-contained manner.

Please amend the paragraph beginning on page 7, line 12 to read as follows:

FIG. 6 provides a number of alternative current profiles 174, 176 and 178 which are applied to the head 112 by the preamp 126 in accordance with preferred embodiments of the present invention. The profiles ~~74~~ 174, 176, 178 are plotted against a common elapsed time x-axis 180 and a common amplitude y-axis 182.

Please amend the paragraph beginning on page 7, line 22 to read as follows:

At time t_1 , the preamp 126 applies the aforementioned demagnetization current which comprises a bi-directional, time varying current with peak magnitude that tapers to a final magnitude (preferably close to zero) at time t_2 in a linear (curve ~~160~~ 174), exponential (curve ~~162~~ 176) or step-wise fashion (curve ~~164~~ 178).